REMARKS

Claims 1 to 4, 7 to 17 and 19 to 24 are pending. Claim 3 is cancelled and claims 24 to 27 are new. No claims are allowed.

1. Claims 1, 7 and 12 are rejected under 35 USC 103(a) as being unpatentable over Lessar et al. (U.S. Patent No. 6,006,133) in view of Inagaki et al. (U.S. Patent Application Pub. No. 2004/0247951). Lessar et al. relates to an implantable medical device powered by a flat electrolytic capacitor. As described at column 8, line 59 to column 9, line 17, one embodiment of the capacitor comprises at least one anode layer having a registration tab extending from a perimeter thereof, at least one cathode layer having a registration tab extending from a perimeter thereof, and registration tabs for connecting anode sub-assemblies or cathode layers in parallel electrically. However, the "registration tabs" extending from the perimeters of the anode and cathode layers are for correct alignment or proper relative positioning. At column 29, line 28+ Lessar et al. discuss an inventive method for "assuring consistent registration of separator layers 165 and 180, anode sub-assemblies 170 and cathode layers 175 in electrode assembly 225; [and] stacking the various elements of electrode assembly 225 using robotic assembly techniques." At column 30, line 6+, another method for assuring registration of separator layers 165 and 180, anode sub-assembly 170 and cathode layer 175 in electrode assembly 225 is described. In this method "alignment elements

disposed within the stacking fixture are employed in a manual process which utilizes fixture registration points."

Instead of the invention defined in amended claim 1 being directed to registration structures for correct alignment or proper relative positioning, it is for the purpose of creating a written or otherwise permanent record containing regular entries of unique details regarding a particular electrochemical cell.

Inagaki et al. describe a fuel cell 10 comprising a plurality of unit cells 30, each formed by interposing a membrane electrode assembly (MEA) 29 between two separators 36 and 38. The MEA 29 is formed by interposing a solid electrolyte membrane 31 (a perfluoro sulfonic acid resin) between gas diffusion electrodes 34 and 35. The gas diffusion electrodes 34, 35 are formed from a carbon cloth and a woven material of carbon fiber threads. Catalyst electrodes 32, 33 are embedded on the respective surfaces of the gas diffusion electrodes 34, 35 that face the solid electrolyte membrane 31. The catalyst electrodes are formed from carbon powder carrying platinum, an alloy of platinum and another metal. The separators 36, 38 are formed from gas-impermeable dense carbon. Finally, a barcode 41 is provided on the exposed side surface of the separator 38.

In paragraph 0032, the Inagaki et al. publication describes an exemplary situation where the fuel cell 10 can no longer output a desired voltage and the unit 30 having a reduced output voltage is specified. Importantly, "the barcode 41 is accessible from the exposed side surface of the separator 38 of the unit cell 30. This allows the information to be easily read without decomposing the unit cell 30." (See

paragraph 0033.) The barcode 41 is optically read with a barcode reader 52 and the information relating to that unit cell 30 is then verified on the display of the database computer 50.

Paragraph 0034 describes other types of optically or mechanically readable structures in lieu of the barcode 41. They include a magnetically readable tape 43 (Fig. 5B), an electrically readable IC chip 46 provided on the side surface of the separator 38 (Fig. 5C), and an IC chip 45 embedded in the separator 38 (Fig. 5D). Alternatively, as described at paragraph 0036, "the barcode 41 may be provided on the exposed surface of an any (sp) portion of the cell lamination 11 (e.g., the side surface of any one of the separators of the plurality of unit cells 30 included in the cell lamination 11, or the side surface of the insulator 14 or the end plate 16 of the fuel cell)."

Regardless whether the information storage device is a barcode or an IC chip, it is not an etched structure as set forth in independent claim 1. This claim has been amended to include the subject matter of cancelled claim 3 and now calls for the "unique identification code [being] etched into an exposed portion of the current collector." Even if the barcode were to be placed "on the current collector instead of the separator, which can also be used as a current collector" as proposed by the Examiner because such repositioning "would be obvious to one having ordinary skill in the art since it has been held that rearranging parts of an invention involves only routine skill in the art", it would not teach the presently claimed invention. This is because neither a barcode nor an IC chip is an etched structure. In fact, the Applicants point out

at page 7, line 23 to page 8, line 3, that the "ID matrix 62 is preferably etched, such as by a laser, onto the connecting tab 36. This provides the matrix with a smaller footprint than a typical bar code, thus minimizing warping of the current collector due to excessive heat. Etching is also preferred because it is permanent and will not contaminate the cell as an ink jet marking system might."

For one, the materials of construction for the various parts of the fuel cell are not of materials that readily lend themselves to being etched. The MEA 29 is a resin material, the gas diffusion electrodes 34, 35 are of carbon, the catalyst electrodes 32, 33 are of carbon/Pt and the separators 36, 38 are of dense carbon. None of these materials would be suitable for etching. Nonetheless, the Examiner is of the opinion that the barcode could just as easily be placed on the "current collector plates 12, 12 arranged at both ends of the cell lamination 11" (paragraph 0027). This still does not mean that the barcode is an etched structure.

Furthermore, such repositioning would partially defeat the purpose of the barcode as a dedicated information storage device for a particular unit cell 30. As shown in Fig. 1, the fuel cell is comprised of a plurality of unit cells 30 each including a solid electrolyte membrane interposed between separators via an electrode and each having its own barcode 41. As discussed at paragraph 0030, "[e]ach code number contained in the barcode 41 is correlated to the information related to the unit cell 30." If the barcode 41 were to be placed on the current collectors 12, to which unit cell 30 of the many making up the fuel cell would it relate to? Would not that defeat the purpose of having a dedicated barcode for each unit cell? Even

if the barcode could be read by a scanner and contain information as to which one of the unit cells it related to, would not that be introducing more potential error into the process than Inagaki et al. intended? It seems to the Applicants that one of the main purposes of the barcode is to facilitate maintenance of a particular unit cell, not to complicate the process.

In that light, the Applicants respectfully disagree with the Examiner that moving a barcode from a specific unit cell to a common current collector would mean merely "rearranging parts of the invention [that] involves only routine skill in the art." This is in addition to a barcode and an IC chip not being an etched structure.

Accordingly, amended independent claim 1 is believed to be allowable in light of the cited combination of prior art references. Claims 7 and 12 are allowable as hinging from a patentable base claim.

Reconsideration of this rejection is requested.

2. Claims 9 to 13, 15, 16 and 19 are rejected under 35 USC 103(a) as being unpatentable over Lessar et al. in view of Inagaki et al. as applied to claim 7 and in view of Gan et al. (U.S. Patent No. 6,790,561). Independent claims 13 and 16 have been amended in a similar manner as independent claim 1. In its presently amended form, claim 1 is believed to cover subject matter that is patentable in light of Lessar et al. in view of Inagaki et al. As pointed out by the Examiner, the Gan et al. patent teaches an electrode having two active materials with the following configuration: SVO/current collector/CF_x/current collector/SVO. This teaching combined

with the primary and secondary references does not bridge the gulf between the presently claimed invention and the prior art, as discussed in section 1 above.

Accordingly, amended independent claims 13 and 16 are believed to be allowable in light of the cited combination of prior art references. Claims 9 to 12, 15 and 19 are patentable as hinging from allowable base claims.

Reconsideration of this rejection is requested.

3. Claims 2 to 4, 14, 17 and 20 to 22 are rejected under 35 USC 103(a) as being unpatentable over Lessar et al. in view of Inagaki et al. and Gan et al. as applied to claims 1 and 13 above and in further view of Merlin et al. (U.S. Patent No. 5,552,574). Merlin et al. relates to a method for marking the connector of a chip card, bank card, telephone card, and the like, with a laser. The patented "invention provides for: recognizing identification particulars memorized in said chip; marking said identification particulars on the connector; [and] marking the identification particulars also on the card." As further discussed at column 4, lines 11 to 24 with respect to Fig. 6, "it is possible, by means of sensors 71, 72, to recognize identification particulars to be marked that are recorded electrically in the chip 16 and to transmit them to the microprocessor 60 which, apart from the modulation of the laser L, controls the means 80 for the sweeping of the laser beam 30 along x and y as a function of the particulars received. These identification elements may thus be etched on the metal contacts 12 of the micromodule 10 as well as on the very body of the card 1, thus forming a security means by which

the interchanging of the micromodule 10 and the card 1 can be avoided."

Reiterating their previous position set forth in the amendment filed June 6, 2006, the Applicants again state that the use of a unique identification code provided in a metal surface, by laser or otherwise, is not necessarily novel in and of itself. What is novel is its use in an electrochemical cell and the Inagaki et al. reference does not fill in the missing piece between their claimed invention and Merlin et al. This is because it would not have been obvious to "rearrange" the parts of Inagaki et al.'s fuel cell 10 to etch the current collectors 12 at both end of the cell lamination. Not only does Inagaki et al. not teach etched information structures, to combine this reference with Merlin et al. would still defeat the purpose of a dedicated barcode, and the like, for a fuel cell containing many unit cells 30.

Therefore, with independent claims 13 and 16 having been amended in a similar manner as independent claim 1, they are believed to cover subject matter that is patentable in light of Lessar et al. in view of Inagaki et al. and Gan et al. Merlin et al. combined with the other references still does not bridge the gulf between the presently claimed invention and the prior art. Merlin et al. does not relate to etching "an exposed portion of the current collector" of an electrochemical cell.

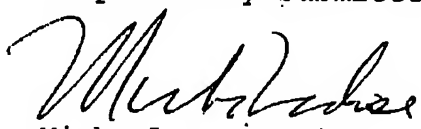
Accordingly, amended independent claims 13 and 16 are believed to be allowable in light of this combination of prior art references. Claims 2, 4, 14, 17 and 20 to 22 are patentable as hinging from allowable base claims. Claim 3 is cancelled.

Reconsideration of this rejection is requested.

4. Newly added claims 24, 25 and 27 set forth various materials that are useful for the present current collectors. Support for this is found at column 4, lines 12 to 21 in U.S. Patent No. 6,110,622 to Frysz et al., which is incorporated by reference into the Applicants' specification at page 9, line 29 to page 10, line 4. No new matter has been added.

It is believed that claims 1, 2, 4, 7 to 17 and 19 to 27 are in condition for allowance. Notice of Allowance is requested.

Respectfully Submitted,



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